

REMARKS

The Final Office Action mailed May 23, 2008, considered and rejected claims 1-4 and 6-22. Claims 6-8 were objected to because of informalities. Claims 1-4 and 6-22 were rejected under 35 U.S.C. § 102(b) as being anticipated by Iborra et al., U.S. Publ. No. 2002/0100014 (filed Jun. 1, 2001) (hereinafter Iborra).¹

By this response, claims 1, 8, 11, and 15 are amended such that claims 1-4 and 6-22 remain pending.² Claims 1, 11, and 15 are independent claims which remain at issue. Support for the amendments may be found within Specification ¶¶ 25-34 and Fig's 2-5.³

As reflected in the claims, the present invention is directed generally toward data structures and methods for a type system to provide services to implement software design tools. Claim 1 recites, for instance, in combination with all the elements of the claim, a data structure encoded upon computer-readable media for a type system. The data structure comprises a ClrElement base class for capturing common functionality of objects of the type system. The data structure also includes at least one controller object in communication with the base class which validates requested services based upon a set of rules. The data structure also includes a first class which provides a level of abstraction between a second and third class.

Claim 11, in combination with all the elements of the claims, recites a method of modifying an artifact for use in a type system. The method includes receiving a request from an application programming interface to modify an artifact in the type system. The meta-model of the type system includes a ClrElement base class for capturing common functionality of objects of the type system. In response to issuing at least one instruction to a language specific controller object, a language specific controller object validates the request based on rules associated with a programming language. In response to a validated request from the language specific controller, the artifact is modified.

¹ Although the prior art status of the cited art is not being challenged at this time, Applicant reserves the right to challenge the prior art status of the cited art at any appropriate time, should it arise. Accordingly, any arguments and amendments made herein should not be construed as acquiescing to any prior art status of the cited art.

² The amendments and remarks presented herein are consistent with the information presented by telephone by patent attorney Colby Nuttall (reg. no. 58,146) and attorney Thomas Bonacci.

³ Note that the paragraph numbers are taken from the published application, U.S. Patent Pub. 2005/0235250 (Oct. 20, 2005). It should also be noted that the present invention and claims as recited take support from the entire Specification. As such, no particular part of the Specification should be considered separately from the entirety of the Specification.

Claim 15, in combination with all the elements of the claims, recites a method of creating an artifact for use in a type system meta-model. The method includes receiving a request from an application programming interface to create an artifact in the type system meta-model. The type system meta-model includes a ClrElement base class for capturing common functionality of objects of the type system. In response to issuing at least one instruction to a language specific controller object, the language specific controller object validates the request based on rules associated with a programming language. In response to a validated request from the language specific controller, an artifact is created.

Rejections under 35 U.S.C. § 101:

Claims 1–10 were rejected under 35 U.S.C. § 101 as being directed toward non-statutory subject matter.⁴ In particular, the Office asserted that “[t]he ‘data structure’ . . . as presently drafted merely amount (sic) to a non-functional descriptive material, as there is no ‘act’ being performed – See MPEP 2106.01(II)”⁵ The Applicants respectfully disagree and traverse the rejection.

The Applicants respectfully submit that MPEP § 2106.01(II) does not require or suggest than any act be performed.⁶ Further, both the case law and the MPEP agree that a data structure encoded on computer-readable media may properly be considered statutory subject matter under 35 U.S.C. § 101.⁷

“Descriptive material can be characterized as either ‘functional descriptive material’ or ‘nonfunctional descriptive material.’ . . . ‘[F]unctional descriptive material’ consists of data structures . . . which impart functionality when employed as a computer component. (The definition of ‘data structure’ is ‘a physical or logical relationship among data elements, designed to support specific data manipulation functions.’ The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) ‘Nonfunctional descriptive material’

⁴ Office Comm. p. 6.

⁵ Office Comm. p. 7.

⁶ MPEP § 2106.01(II).

⁷ See MPEP § 2106.01(I).

includes but is not limited to music, literary works, and a compilation or mere arrangement of data.”⁸

“When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and *will be statutory* in most cases since use of technology permits the function of the descriptive material to be realized.”⁹

“Data structures *not claimed as embodied in computer-readable media* are descriptive material *per se* and are not statutory because they are not capable of causing functional change in the computer. See, e.g., *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure *per se* held nonstatutory). . . . In contrast, a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory.”¹⁰

The data structure of claim 1 is encoded upon computer-readable media. As such, the data structure of claim 1 defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized. Therefore, the data structure of claim 1 is thus statutory.

Because the data structure encoded upon computer-readable media of claim 1 should properly be considered statutory, the Applicants respectfully submit the rejection under 35 U.S.C. § 101 is improper and should be withdrawn. The Applicants respectfully request claims 1–10 be favorably reconsidered.

Rejections under 35 U.S.C. § 102:

Claims 1–4 and 6–22 were rejected under 35 U.S.C. § 102(b) as being anticipated by Iborra.¹¹ Independent claims 1, 11, and 15 have now been amended and the Applicants submit that Iborra fails to teach each and every element of the claims as now presented.

⁸ MPEP § 2106.01 (emphasis added).

⁹ MPEP § 2106.01.

¹⁰ MPEP § 2106.01(I) (emphasis added).

¹¹ Office Comm. p. 7.

As to claim 1, in particular, Iborra fails to teach a ClrElement base class for capturing common functionality of objects of the type system, the ClrElement base class comprising data members AttributeDeclaration, DocSummary, DocRemarks, IsEditable, IsInjected, IsCodeParseable, and IsFromReferenceAssemblies.

Because Iborra fails to teach every element of claim 1, a rejection under 35 U.S.C. § 102(b) would be improper and should be withdrawn. Further, the Applicants respectfully reassert the traversals as discussed in the response dated Feb. 19, 2008. Accordingly, the Applicants respectfully request favorable reconsideration of claim 1.

As to claim 11, in particular, Iborra fails to teach receiving a request from an application programming interface to modify an artifact in the type system meta-model, wherein the type system meta-model comprises a ClrElement base class for capturing common functionality of objects of the type system, the ClrElement base class comprising data members AttributeDeclaration, DocSummary, DocRemarks, IsEditable, IsInjected, IsCodeParseable, and IsFromReferenceAssemblies, and the type system meta-model includes a first class providing a level of abstraction between a second class and a third class, the second class and the third class searchable by the first class.

Because Iborra fails to teach every element of claim 11, a rejection under 35 U.S.C. § 102(b) would be improper and should be withdrawn. Further, the Applicants respectfully reassert the traversals as discussed in the response dated Feb. 19, 2008. Accordingly, the Applicants respectfully request favorable reconsideration of claim 11.

As to claim 15, in particular, Iborra fails to teach receiving a request from an application programming interface to create an artifact in the type system meta-model, wherein the type system meta-model comprises a ClrElement base class for capturing common functionality of objects of the type system, the ClrElement base class comprising data members AttributeDeclaration, DocSummary, DocRemarks, IsEditable, IsInjected, IsCodeParseable, and IsFromReferenceAssemblies, and the type system meta-model includes a first class providing a level of abstraction between a second class and a third class, the second class and the third class searchable by the first class.

Because Iborra fails to teach every element of claim 15, a rejection under 35 U.S.C. § 102(b) would be improper and should be withdrawn. Further, the Applicants respectfully

reassert the traversals as discussed in the response dated Feb. 19, 2008. Accordingly, the Applicants respectfully request favorable reconsideration of claim 15.

In view of the foregoing, Applicant respectfully submits that the other rejections to the claims are now moot and do not, therefore, need to be addressed individually at this time. It will be appreciated, however, that this should not be construed as Applicant acquiescing to any of the purported teachings or assertions made in the last action regarding the cited art or the pending application, including any official notice. Instead, Applicant reserves the right to challenge any of the purported teachings or assertions made in the last action at any appropriate time in the future, should the need arise. Furthermore, to the extent that the Examiner has relied on any Official Notice, explicitly or implicitly, Applicant specifically requests that the Examiner provide references supporting the teachings officially noticed, as well as the required motivation or suggestion to combine the relied upon notice with the other art of record.

In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, the Examiner is requested to contact the undersigned attorney at (801) 533-9800.

Dated this 24th day of September, 2008.

Respectfully submitted,



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